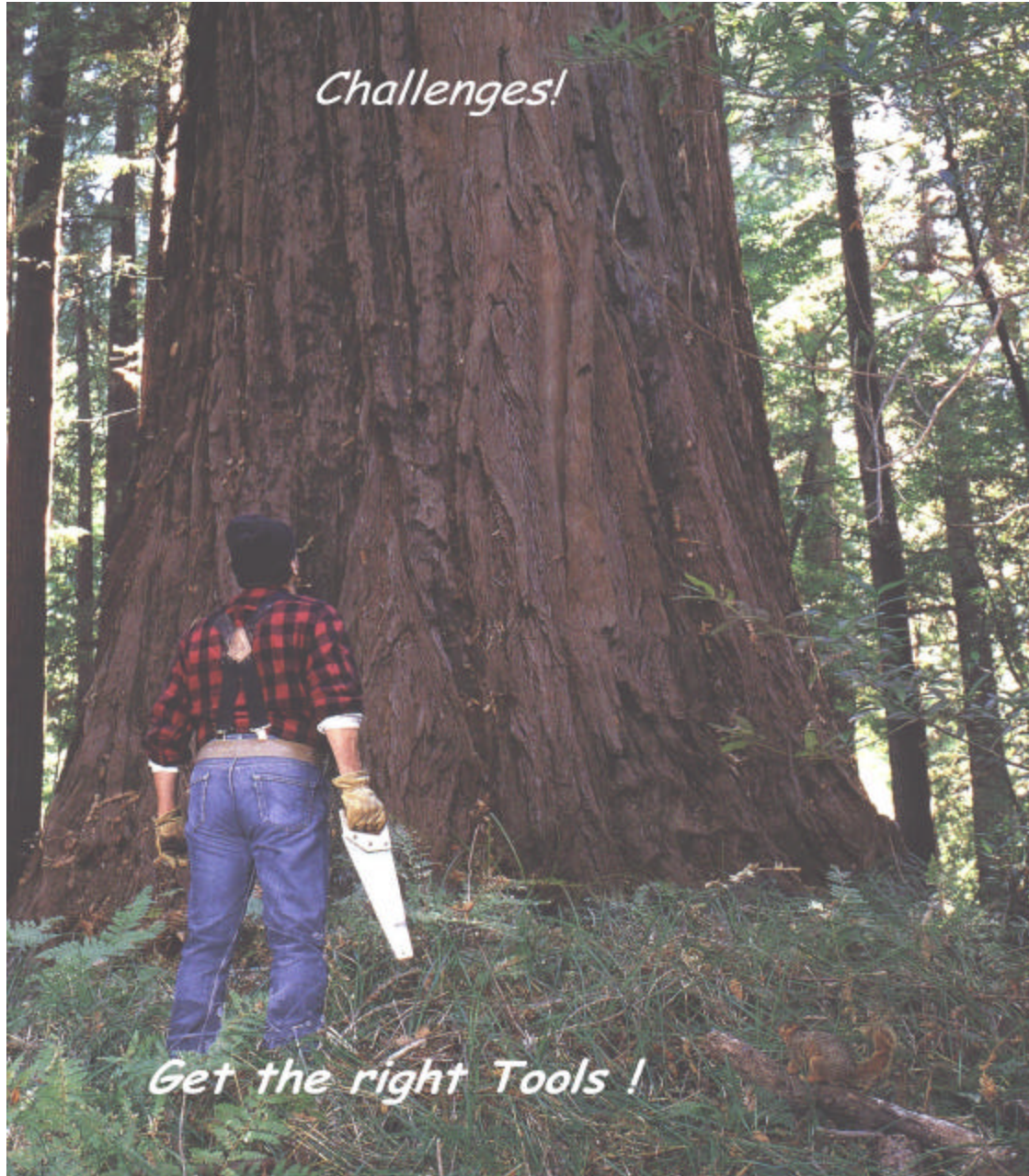


*Challenges!*

*Get the right Tools !*

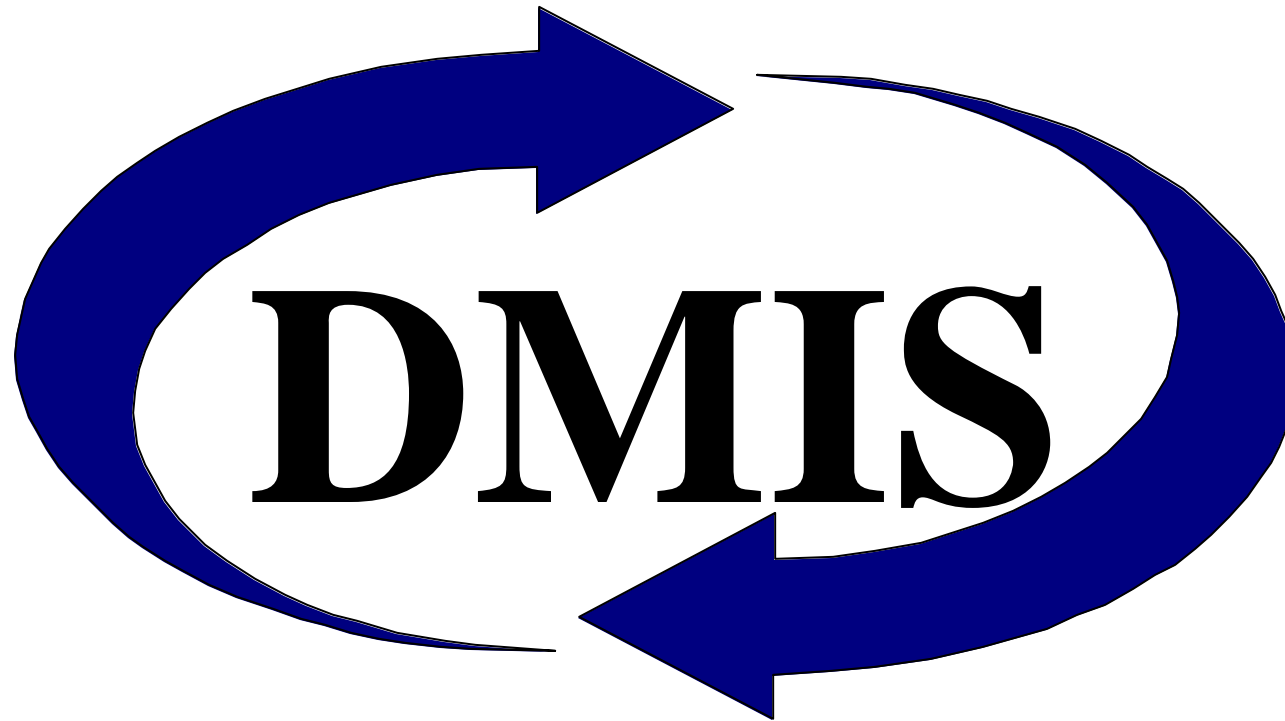


# DMIS Application Profiles & Conformance Testing

Metrology Interoperability Group  
August 29, 2001

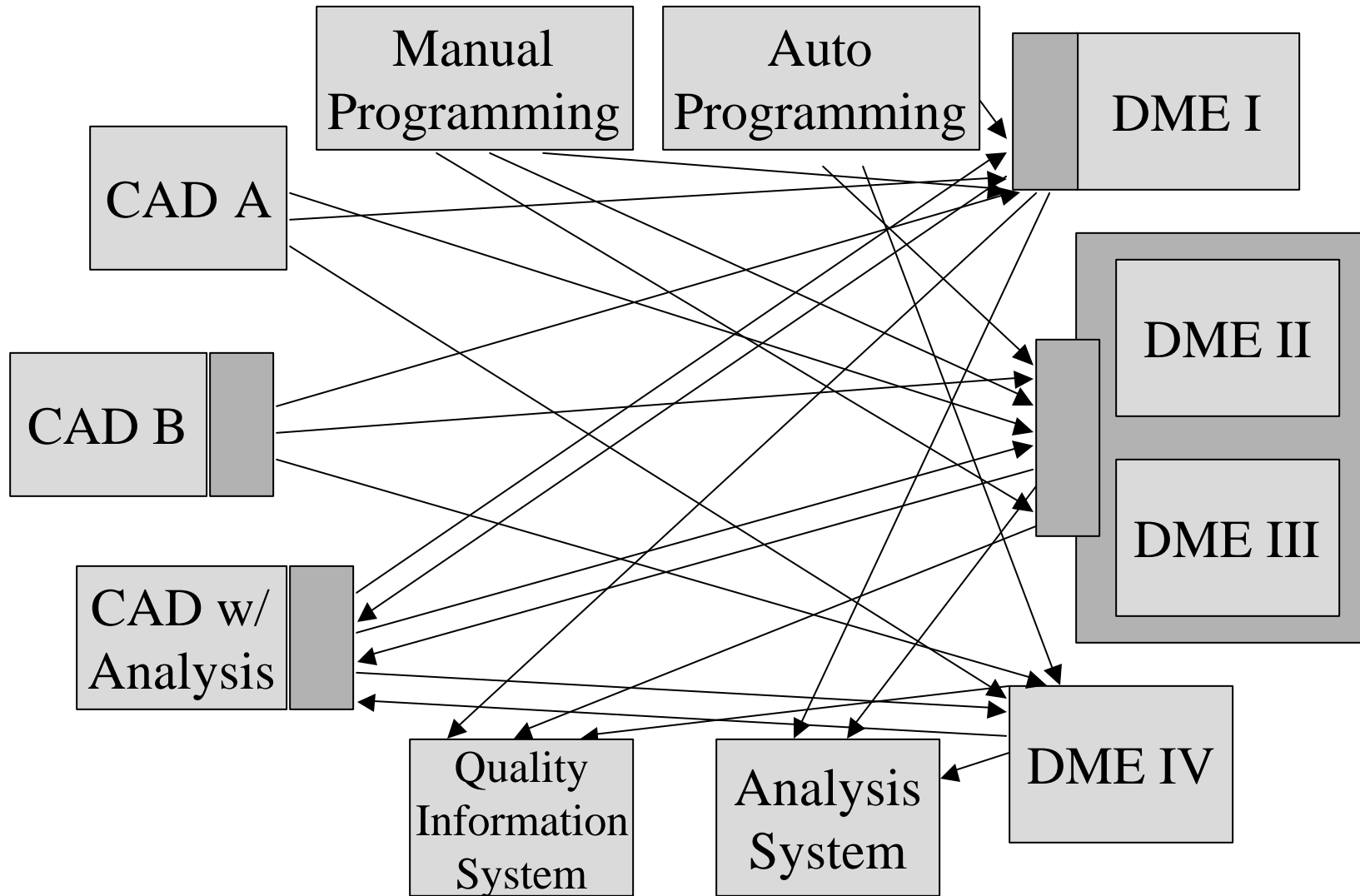
Curtis W. Brown  
Honeywell, FM&T  
cbrown@kcp.com

Albert Wavering  
NIST  
albert.wavering@nist.gov

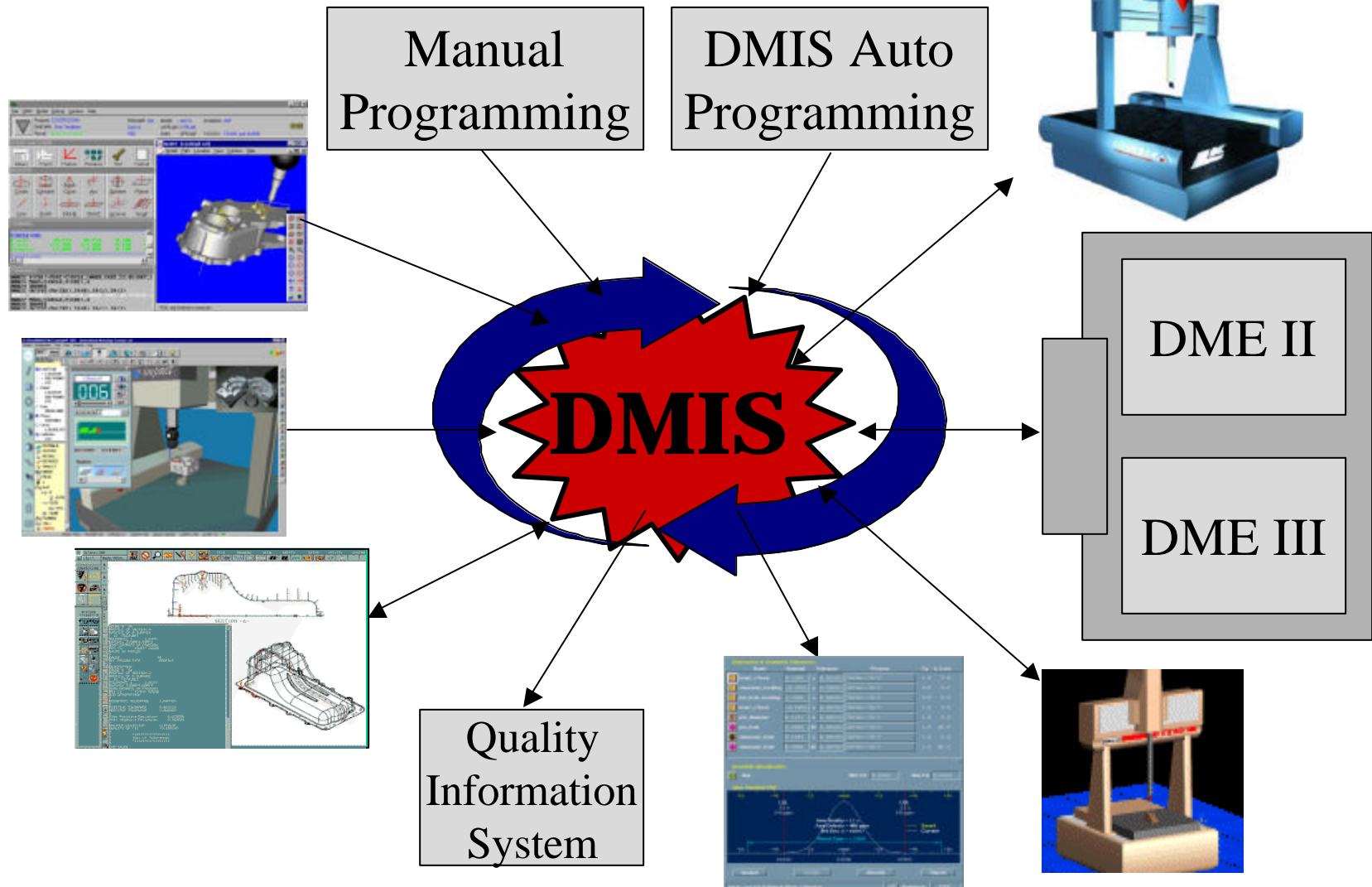


**Dimensional  
Measuring  
Interface  
Standard**

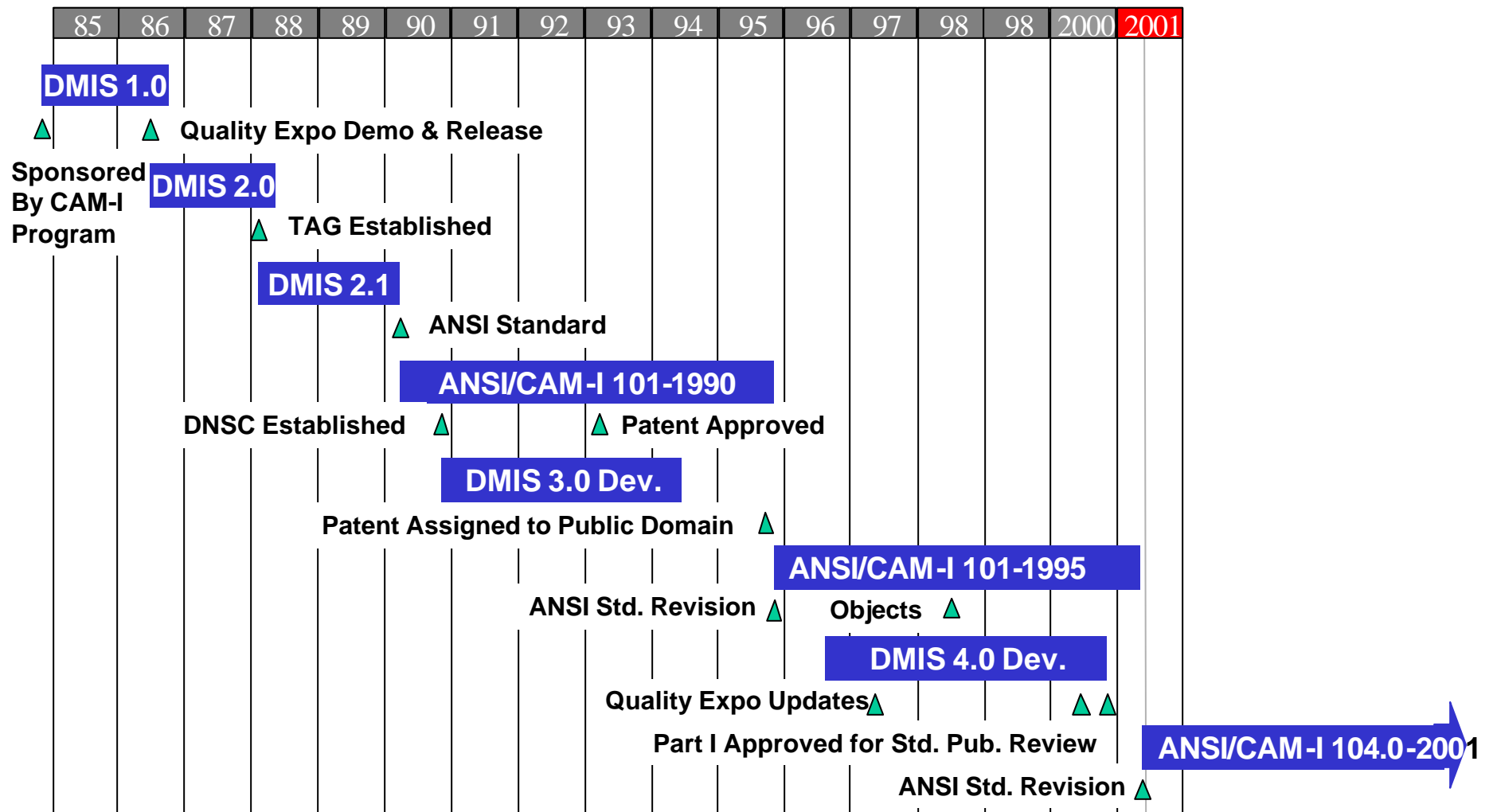
# Pre-DMIS Environment



# DMIS Environment



# DMIS Timeline & Milestones



# ANSI/CAM-I 104.0 – 2001

## Part 1

CAM-I, Inc.

3301 Airport Freeway, Suite 324

Bedford, TX 76021, USA

Tel: (817) 860-1654

Fax: (817) 275-6450

[bsquier@cam-i.org](mailto:bsquier@cam-i.org)

# DNSSC Recognized:

- **The Difficulty of Using Past DMIS CHFiles for Evaluating Conformity.**
- **The Necessity of Guaranteed Interoperability between DMIS Systems.**
- **That Most DMIS Applications do not Need to Implement the Entire Standard.**
- **A Need to Define a DMIS Validation Mechanism.**



# DMIS 4.0:

- Rewrote the DMIS CHFile using the Extended Bakus Naur Format (EBNF)
- Identified Conformance Testing Services
  - To Validate CHFiles
  - To Test Conformance
- Defined an Approach to Insure DMIS Conformity within a DMIS Functional Subset.

# DMIS Application Profiles

- Required for DMIS Conformance Testing
- Used to Defines Functional Subsets
- Contains Conformance Levels
  - Level 1:Essential
  - Level 2:Important
  - Level 3:Beneficial
- Must be Formulated, Agreed, and Submitted
- Formally Recognized by DNSC
- Currently none have been Formally Recognized or Submitted

# Application Profile Representation

- Currently no Templates have been Defined.
- Define using DMIS 4.0 CHFile EBNF for Easier Comparisons with System's CHFile.
- Designate Conformance Levels within the Application Profile EBNFs .

# Conformance Testing Service

- Can be Provided any Organization.
- Service to be Recognized by the DNSC.
- Develops Test Suites to:
  - Validate CHFile
  - Test DMIS Implementations for Conformity to One or More Application Profiles.
- Currently, No Conformance Testing Service Exist.

# DMIS Conformance Testing

- Verify syntax of DMIS input and output files
- Verify that a generator produces conforming metafiles which accurately and correctly represent the intended results
- Verify that an interpreter can correctly and completely read conforming metafiles and produce intended results
- Verify that the DMIS characterization file is syntactically correct and that it accurately represents the capabilities of the application
- Conforming implementation must adhere to prescribed syntax **and** semantics

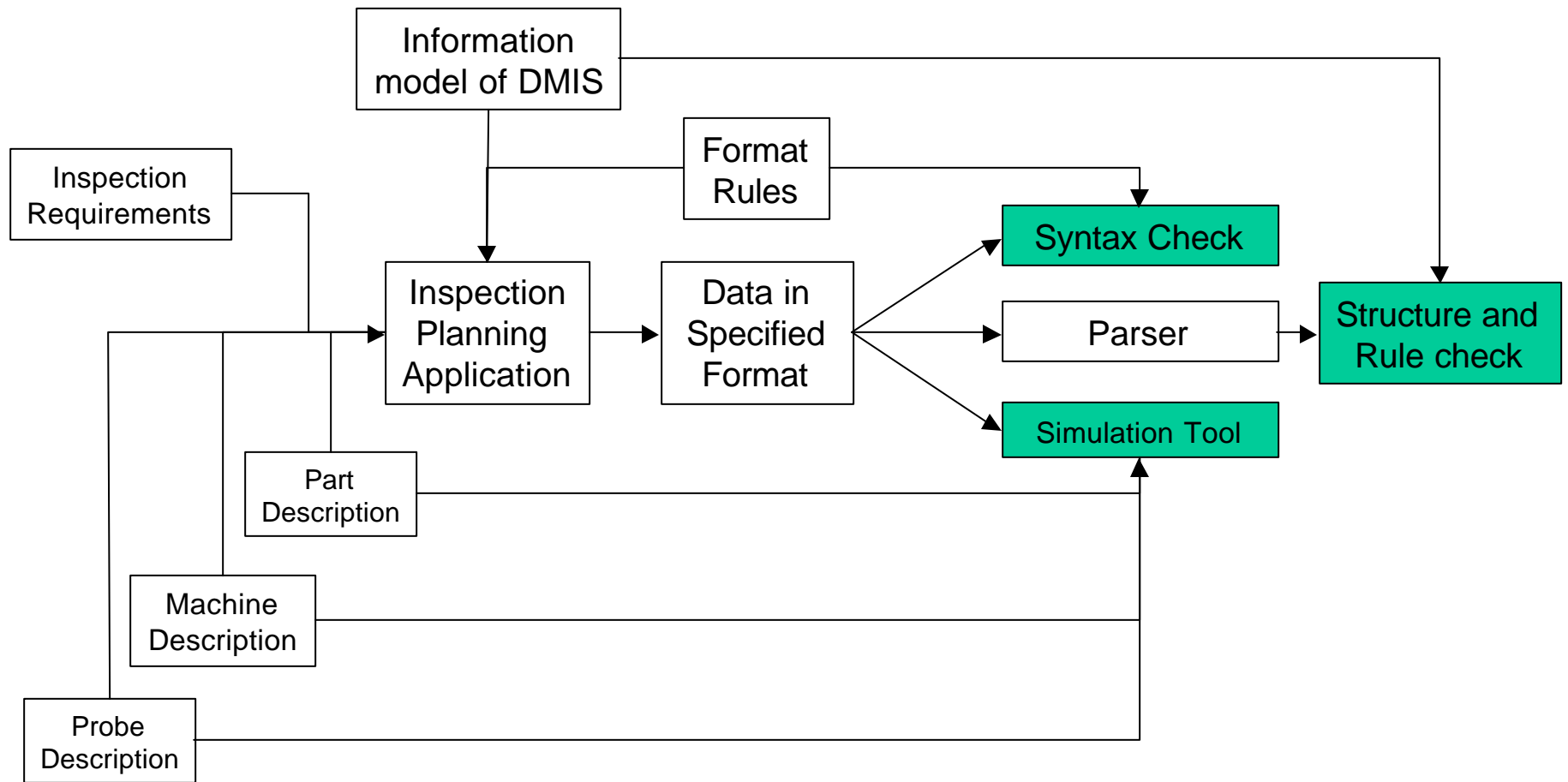
# Conformance Claim

- **OurProduct, Version x.y from DMISVendor conforms to DMIS Application Profile ABC, Level 2 and XYZ, Level 3.**

# Application Profile Development

- Proposed as AIAG Work Request. Steps include:
  - Discuss common user needs and decide on an application area for which to develop an application profile (e.g., prismatic, sheet metal, etc.)
  - Identify and agree upon the subset of DMIS functionality needed to meet the requirements (define the application profile)
  - Engage vendors and get their input on the application profile (reasonableness, implementation issues, how it fits with their plans etc.)
  - Encourage implementation of the application profile
  - Develop conformance test tools and suites to evaluate conformance of implementations to the application profile (NIST lead)
  - Conduct testing pilot of application profile implementations, using Metrology Testbed equipment and software at industry, NIST, and university sites

# Proposed DMIS Testing Architecture





# Seeking Participation

- User representatives who know DMIS well
- Vendors
- Universities, NIST